

REMARKS

I. Introduction

In response to the pending Office Action, Applicant has cancelled claims 3 and 5-8, 11-12 and 15-17, added new claims 18-19, and amended claims 1, 9, 13 and 14 to overcome the rejections under 35 U.S.C. § 112, second paragraph, and to further clarify the subject matter of the present invention. In addition, Applicant has amended the specification in order to correct some inadvertent errors. No new matter has been added.

For the reasons set forth below, Applicant respectfully submits that all pending claims are in condition for allowance.

II. The Rejection Of Claims 1, 3 And 5-17 Under 35 U.S.C. § 102

Claims 1, 3 and 5-17 was rejected under 35 U.S.C. § 102(b) as being anticipated by Wong et al. (*Adv. Mater.*, **1996**, 8 (11), 928-932). As claims 3, 5-8, 11-12 and 15-17 have been cancelled, the rejections of these claims are now moot. Applicant respectfully submits that Wong et al. fails to anticipate the pending claims for at least the following reasons.

With regard to the present invention, newly amended claim 1 recites, a method of production of a nanoparticle including a protein having a cavity inside and one of CdSe, CdS, ZnSe and ZnS filled in the cavity, the method comprising the step of filling the cavity with one of CdSe, CdS, ZnSe and ZnS by mixing the protein including the cavity inside, a complex ion $[M(NH_3)_4]^{2+}$ (M being one of Cd and Zn), and H_2NCXNH_2 (X being one of S and Se) with water, wherein the protein includes a channel connecting between the cavity and the outside of the protein and an inner spherical surface of the protein has a negative electric charge.

In contrast to the present invention, Wong fails to disclose a method of production of a nanoparticle comprising the step of filling the cavity with a complex ion $[M(NH_3)_4]^{2+}$ wherein M is one of Cd and Zn. Wong discloses the use of cadmium acetate, which is not the complex ion recited in claim 1 (see, Wong, p. 931). As is well known in the art, a complex is a coordinate compound formed by a ligand containing unshared pairs of electrons coordinated to another positive ion, usually a metal ion. Cadmium acetate is not a complex ion, but a salt, because the acetate anion does not form a coordinate complex with the metal with an unshared pair of electrons, but an ionic bond. Thus, as cadmium acetate is not the complex ion claimed in the present invention, nor even a complex ion, Applicant submits that Wong fails to disclose a method of production of a nanoparticle comprising the step of filling the cavity with a complex ion $[M(NH_3)_4]^{2+}$ wherein M is one of Cd and Zn.

As anticipation under 35 U.S.C. § 102 requires that each element of the claim in issue be found, either expressly described or under principles of inherency, in a single prior art reference, *Kalman v. Kimberly-Clark Corp.*, 713 F.2d 760, 218 USPQ 781 (Fed. Cir. 1983), and at a minimum, Wong does not disclose a method of production of a nanoparticle comprising the step of filling the cavity with a complex ion $[M(NH_3)_4]^{2+}$ wherein M is one of Cd and Zn, it is clear that Wong does not anticipate claim 1 of the present invention.

**III. All Dependent Claims Are Allowable Because The
Independent Claim From Which They Depend Is Allowable**

Under Federal Circuit guidelines, a dependent claim is nonobvious if the independent claim upon which it depends is allowable because all the limitations of the independent claim are contained in the dependent claims, *Hartness International Inc. v. Simplimatic Engineering Co.*, 819 F.2d at 1100, 1108 (Fed. Cir. 1987). Accordingly, as claim 1 is patentable for the reasons

set forth above, it is respectfully submitted that all pending dependent claims are also in condition for allowance.

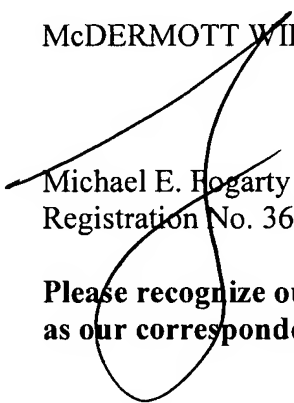
IV. Conclusion

Having fully responded to all matters raised in the Office Action, Applicant submits that all claims are in condition for allowance, an indication of which is respectfully solicited.

To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made. Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

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